

## TRAINING BROCHURE

# Applied optics training



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## Applied optics

**Price:** € 3,125 excl. VAT \*

**Duration:** 15 afternoon sessions

**Contact:** [training@hightechinstitute.nl](mailto:training@hightechinstitute.nl), +31 85 401 3600

**Score:** 8.8 ★★★★★☆

### Intro

People who don't have to design (specify, test, ...) optical systems but are working in projects with optics together with optical designers and want to know more about optical principles, will benefit from this application-oriented course. By learning the 'optical language' and understanding the principles of optical systems, non-optical engineers are able to collaborate more effectively with their optical expert team members. This makes the whole system engineering team more successful.

*This training is available for open enrollment as well as for in-company sessions. For in-company sessions, the Applied optics training can be adapted to your situation and special needs.*

### Intended for

This course is intended for people with a non-optical background (e.g. electronics, mechanics, chemistry), who work in projects with optics and want to increase their level of understanding of optical principles and applications. Technical college/university level.

### Certified by



### Certification

This course is certified by the European society for precision engineering & nanotechnology ([euspen](#)) and the Dutch Society for Precision Engineering ([DSPE](#)) and leads to the [ECP2-certificate](#) in case homework results are sufficient.

### Course leader

[Hans Vink MSc](#)

### Trainers

[Dr. Jean Schleipen](#)  
[Jan Jaap Krikke MSc](#)  
[Leon van der Graaff](#)

*\* Prices are subject to change. Price correction will be applied at the end of the year.*

Keep me posted



## Program

- An introduction to light;
- Electromagnetic waves;
- Geometrical optics and ray tracing;
- Optical aberrations and system design;
- Diffraction;
- Interference;
- Polarisation and Birefringence;
- Optical systems;
- Light-matter interaction;
- Light sources and detectors;
- Tour to a small design and manufacturing company of mechanical and optical components during this Eindhoven edition;
- Optical measurement and testing;
- Illumination for optical inspection;
- Optical lithography (2 lessons).

The lessons include many demonstrations and are intermixed with hands-on sessions, as:

- Determination of refractive index of perspex and water using critical angle and Brewster angle;
- Total internal reflection;
- Gaussian imaging optics;
- Optical aberrations;
- Laser beam diffraction and interference;
- The diffraction grating;
- Polarisation;
- Measuring optical activity of sugar solution;
- The spectrometer;
- Spectroscopy.

The 5 hands-on sessions take 4 hours, the other sessions take 3 hours.  
Study load excluding the class sessions: 3 hours a week.

## Methods

Lectures, demonstrations, hands-on sessions, tour, home assignments.  
Course material: course notes, book. Award: certificate in case home work results are sufficient.

Read the interview:



Jean Schleipen (Trainer)

*"My aim is, in addition to transferring knowledge, to fascinate and enthuse all participants for our beautiful and important field of science."*

Remarks from participants:

- 'This training makes me want to design and test optical systems. Very good.' > Gijs Kramer - ASML
- 'Very good, in details, time for questions, it fits to my needs as a lens designer.' > Dick Verhagen , Innovalens
- 'Good training, good balance between theory vs practice.' > Daniel Suripatty , ASML
- 'Optics excursion: Very nice, good explanation and nice examples.' > Thijs Verhees , ASML
- 'Very interesting training if you want to know more about optics and how it is applied. Nice diverse content and real life examples.' > Jordy de Renet , ASML